

Attorney Docket # 4285-7

Serial No. 10/691,404
Amdt. dated November 29, 2004
Reply to Office Action dated September 13, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A crash-bang cartridge assembly, comprising
a tubular cartridge; and
a projectile within said tubular cartridge, said projectile comprising:
a tubular projectile casing;
a delay block located at one end of the tubular projectile casing;
a delay fuse column within said delay block, said delay fuse column being
at least partially filled with a delay fuse composition;
a flash charge within said projectile casing, said flash charge being ignited
by said delay fuse composition; and
a weighty and frangible ballast located on a leading edge of said projectile,
at an end of the tubular projectile casing opposite from the end having
the delay block, wherein a weight of said ballast is sufficient to provide
stability and accuracy in flight, and wherein ~~an at least one material~~
~~comprising~~ the weighty and frangible ballast comprises a mixture of
zinc powder and graphite powder where the graphite powder coats the
zinc particles comprising the zinc powder;
wherein the mixture of zinc powder and graphite powder is sufficiently
frangible that, after detonation of said flash charge, the mixture ~~[at least~~
~~one material]~~ comprises low mass, low energy components.
2. (Original) The crash-bang cartridge assembly of claim 1, wherein the low mass, low
energy components comprising the weighty and frangible ballast after detonation are less likely
to cause injury to any creature in a vicinity of said detonation.
3. (Cancelled)

Attorney Docket # 4285-7

Serial No. 10/691,404
Amdt. dated November 29, 2004
Reply to Office Action dated September 13, 2004

4. (Original) The crash-bang cartridge assembly of claim 1, wherein the delay fuse composition is consolidated.

5. (Currently Amended) The crash-bang cartridge assembly of claim 1, wherein ~~the at least one material comprising~~ the weighty and frangible ballast is consolidated.

6. (Canceled)

7. (Currently Amended) The crash-bang cartridge assembly of claim 1, wherein ~~the at least one material comprising~~ the weighty and frangible ballast further comprises metallic particles.

8. (Previously Presented) The crash-bang cartridge assembly of claim 7, wherein the metallic particles form a metallic powder.

9. (Currently Amended) The crash-bang cartridge assembly of claim 1 ~~[7]~~, wherein the tubular projectile casing forms a cup and the end of the tubular projectile casing where the weighty and frangible ballast is located forms a solid end of the cup, and wherein ~~the metallic particles comprising~~ the weighty and frangible ballast is consolidated at said solid end of the cup by pressing a ram over the metallic particles forming the weighty and frangible ballast.

10. (Withdrawn) The crash-bang cartridge assembly of claim 7, wherein the weighty and frangible ballast is secured at the end of the tubular projectile casing by a wad.

11. (Withdrawn) The crash-bang cartridge assembly of claim 7, wherein the tubular projectile casing comprises a cardboard tube, and wherein the end of the tubular projectile casing where the weighty and frangible ballast is located is sealed by an upper closure wad and the weighty and frangible ballast is sealed in by a lower closure wad in an inside portion of the tubular projectile casing.

Attorney Docket # 4285-7

Serial No. 10/691,404

Amdt. dated November 29, 2004

Reply to Office Action dated September 13, 2004

12. (Currently Amended) The crash-bang cartridge assembly of claim 1, wherein ~~the at least one material comprising~~ the weighty and frangible ballast further comprises at least one of ~~[zinc particles,]~~ lead particles~~[- graphite particles,]~~ and tungsten particles.

13-14. (Cancelled)

15. (Currently Amended) The crash-bang cartridge assembly of claim 1 ~~[13]~~, wherein the ratio of zinc powder to graphite powder controls a degree of frangibility of the weighty and frangible ballast.

16-17. (Canceled)

18. (Withdrawn) The crash-bang cartridge assembly of claim 1, wherein the projectile further comprises:

a container for the at least one material comprising the weighty and frangible ballast.

19. (Withdrawn) The crash-bang cartridge assembly of claim 18, wherein the container is comprised of nylon.

20. (Original) The crash-bang cartridge assembly of claim 1, wherein the tubular projectile casing comprises at least one of aluminum, plastic, rubber, and cardboard.

21. (Withdrawn) The crash-bang cartridge assembly of claim 1, wherein the projectile further comprises:

an obturator formed on an outer circumference of the tubular projectile casing.

Attorney Docket # 4285-7

Serial No. 10/691,404

Amdt. dated November 29, 2004

Reply to Office Action dated September 13, 2004

22. (Original) The crash-bang cartridge assembly of claim 1, wherein the projectile further comprises:

an igniter located at an end of the delay fuse composition and in proximity to the flash charge, said igniter is comprised of igniter composition, wherein said igniter is ignited by the delay fuse composition, and, in turn, ignites the flash charge.

23. (Original) The crash-bang cartridge assembly of claim 1, further comprising:

a primer at one end of said tubular cartridge;
propellant in said tubular cartridge for launching the projectile from said tubular cartridge, said propellant being ignited by said primer; and
a pressure wad between said propellant and said projectile.

24. (Original) The crash-bang cartridge assembly of claim 22, wherein an end of the tubular cartridge opposite from said end of the tubular cartridge having the primer is crimped inward to seal the projectile within the tubular cartridge.

25. (Original) The crash-bang cartridge assembly of claim 23, further comprising:

a closure wad sealing the projectile within the tubular cartridge, wherein said crimping at least assists in keeping said closure wad in place.

26. (Currently Amended) A crash-bang projectile, said crash-bang projectile fitting within a crash-bang cartridge in order to form a crash-bang cartridge assembly, comprising

a tubular projectile casing;
a flash charge within said tubular projectile casing; and
a weighty and frangible ballast located on a leading edge of said crash-bang projectile, comprising:

a mixture of zinc powder and graphite powder in which the graphite powder coats the zinc particles comprising the zinc powder;

wherein a weight of said ballast is sufficient to provide stability and accuracy in flight; and

Attorney Docket # 4285-7

Serial No. 10/691,404
Amdt. dated November 29, 2004
Reply to Office Action dated September 13, 2004

wherein ~~[an at least one material comprising]~~ the weighty and frangible ballast is sufficiently frangible that, after detonation of said flash charge, the said ballast ~~[the at least one material]~~ comprises low mass, low energy components.

27. (Currently Amended) A method of manufacturing a crash-bang cartridge assembly, said crash-bang cartridge assembly comprising a tubular cartridge and a projectile within said tubular cartridge, said method comprising the steps of:

forming a tubular projectile casing;

placing a delay block at one end of the tubular projectile casing, wherein a delay fuse column is within said delay block, and said delay fuse column is at least partially filled with a delay fuse composition;

placing a flash charge within said projectile casing; and

placing a weighty and frangible ballast on a leading edge of said projectile, at an end of the tubular projectile casing opposite from the end having the delay block^[7];

wherein the weighty and frangible ballast comprises a mixture of zinc powder and graphite powder in which the graphite powder coats the zinc particles comprising the zinc powder;

wherein a weight of said ballast is sufficient to provide stability and accuracy in flight;^[7] and

wherein ~~[an at least one material comprising]~~ the weighty and frangible ballast is sufficiently frangible that, after detonation of said flash charge, said ballast ~~[the at least one material]~~ comprises low mass, low energy components.

28. (Original) The method of claim 27, further comprising the step of:

consolidating the delay fuse composition within the delay block.

29. (Currently Amended) The method of claim 27, further comprising the step of:

consolidating ~~[the at least one material comprising]~~ the weighty and frangible ballast inside the tubular projectile casing.

Attorney Docket # 4285-7

Serial No. 10/691,404
Amdt. dated November 29, 2004
Reply to Office Action dated September 13, 2004

30. (Canceled)

31. (Currently Amended) The method of claim 29, wherein the tubular projectile casing forms a cup and the end of the tubular projectile casing where the weighty and frangible ballast is located forms a solid end of the cup, and wherein said step of consolidating the at least one material comprising the weighty and frangible ballast comprises the step of:

consolidating [~~the at least one material comprising~~] the weighty and frangible ballast at said solid end of the cup by pressing a ram over the at least one material.

32. (Withdrawn) The method of claim 27, further comprising the step of:

securing the weighty and frangible ballast at the end of the tubular projectile casing with a wad.

33. (Withdrawn) The method of claim 27, wherein the tubular projectile casing comprises a cardboard tube, the method further comprising the steps of:

sealing the end of the tubular projectile casing where the weighty and frangible ballast is located with an upper closure wad; and
sealing the weighty and frangible ballast in with a lower closure wad in an inside portion of the tubular projectile casing.

34. (Original) The method of claim 27, further comprising the step of:

controlling a degree of frangibility of the weighty and frangible ballast by
adjusting components comprising the weighty and frangible ballast.

35. (Withdrawn) The method of claim 27, further comprising the step of:

at least one of forming and placing an obturator on an outer circumference of the tubular projectile casing.

Attorney Docket # 4285-7

Serial No. 10/691;404
Amdt. dated November 29, 2004
Reply to Office Action dated September 13, 2004

36. (Original) The method of claim 27, further comprising the steps of:
 placing a primer at one end of said tubular cartridge;
 placing propellant in said tubular cartridge; and
 placing a pressure wad between said propellant and the projectile.
37. (Original) The method of claim 36, further comprising the step of:
 crimping an end of the tubular cartridge opposite from said end of the tubular cartridge having the primer inward to seal the projectile within the tubular cartridge.
38. (Original) The method of claim 37, further comprising the step of:
 placing a closure wad at the end of the tubular cartridge opposite from the primer in order to seal the projectile within the tubular cartridge, wherein said step of crimping at least assists in keeping said closure wad in place.
39. (New) The crash-bang cartridge assembly of claim 5, wherein the weighty and frangible ballast remains substantially within the end of the tubular projectile casing by means of said consolidation.
40. (New) The crash-bang cartridge assembly of claim 1, wherein the weighty and frangible ballast further comprises a liquid.
41. (New) The crash-bang cartridge assembly of claim 40, wherein the liquid comprises methylene chloride.
42. (New) The method of claim 29, wherein the weighty and frangible ballast remains substantially in place in the end of the tubular projectile casing by means of said consolidation.

Attorney Docket # 4285-7

Serial No. 10/691,404
Amdt. dated November 29, 2004
Reply to Office Action dated September 13, 2004

43. (New) The crash-bang projectile of claim 26, wherein the low mass, low energy components comprising the weighty and frangible ballast after detonation are less likely to cause injury to any creature in a vicinity of said detonation.

44. (New) The crash-bang projectile of claim 26, wherein the delay fuse composition is consolidated.

45. (New) The crash-bang projectile of claim 26, wherein the weighty and frangible ballast is consolidated.

46. (New) The crash-bang projectile of claim 26, wherein the tubular projectile casing forms a cup and the end of the tubular projectile casing where the weighty and frangible ballast is located forms a solid end of the cup, and wherein the weighty and frangible ballast is consolidated at said solid end of the cup by pressing a ram over the weighty and frangible ballast.

47. (New) The crash-bang projectile of claim 26, wherein the weighty and frangible ballast is secured at the end of the tubular projectile casing by a wad.

48. (New) The crash-bang projectile of claim 26, wherein the tubular projectile casing comprises a cardboard tube, and wherein the end of the tubular projectile casing where the weighty and frangible ballast is located is sealed by an upper closure wad and the weighty and frangible ballast is sealed in by a lower closure wad in an inside portion of the tubular projectile casing.

49. (New) The crash-bang projectile of claim 26, wherein the ratio of zinc powder to graphite powder controls a degree of frangibility of the weighty and frangible ballast.

Attorney Docket # 4285-7

Serial No. 10/691,404
Amdt. dated November 29, 2004

Reply to Office Action dated September 13, 2004

50. (New) The crash-bang projectile of claim 26, further comprising:
a container for the at least one material comprising the weighty and frangible ballast.
51. (New) The crash-bang projectile of claim 50, wherein the container is comprised of nylon.
52. (New) The crash-bang projectile of claim 26, wherein the tubular projectile casing comprises at least one of aluminum, plastic, rubber, and cardboard.
53. (New) The crash-bang projectile of claim 26, further comprising:
an obturator formed on an outer circumference of the tubular projectile casing.
54. (New) The crash-bang projectile of claim 26, further comprising:
an igniter located at an end of the delay fuse composition and in proximity to the flash charge, said igniter is comprised of igniter composition, wherein said igniter is ignited by the delay fuse composition, and, in turn, ignites the flash charge.
55. (New) The crash-bang projectile of claim 26, wherein the crash-bang cartridge within which the crash-bang projectile fits in order to form a crash-bang assembly further comprises:
a tubular cartridge;
primer at one end of said tubular cartridge;
propellant in said tubular cartridge for launching the crash-bang projectile from said tubular cartridge, said propellant being ignited by said primer; and
a pressure wad between said propellant and said projectile.

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKewed/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER: _____**

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.